

## DOH Study Investigates Development of Tuberculosis in Immigrants and Refugees with Latent Disease

Tuberculosis (TB) has declined steadily in the United States since 1991, but only in the U.S.-born population. In 1995, foreign-born persons accounted for 36% of TB cases nationally. In Washington State, the proportion of TB cases attributable to the foreign-born rose from 47% of 306 cases in 1992 to 59% of 285 cases in 1996.

Immigrants and refugees seeking permanent residency are one distinct population of foreign-born persons entering the United States. All are required to have a clinical evaluation with chest X-ray before entry. Persons infected with TB are categorized as Class A active infectious, Class B1 active noninfectious, or Class B2 inactive noninfectious. Those in Class B are at high risk of developing active TB. Most active cases occur from reactivation of latent infection. The U.S. Public Health Service suggests that local health departments evaluate all Class A, B1, or B2 persons arriving in their counties and place eligible infected persons on chemoprophylaxis.

### Study Examines Disease Expression

In fall 1997, the Department of Health investigated whether TB-infected immigrants and refugees (Class B) were developing disease. This study sought to characterize this population, determine the time between arrival in Washington and disease expression, and to make recommendations for screening and evaluation.

Investigators matched a list of all Class B persons who entered the United States using Washington State as their port of entry from 1986 through 1996 (n=6,732) with the state Tuberculosis Register. Subjects' names and dates of birth were used in the matching and verified through record review using county and date of arrival, sex, and alien number (if available).

A new, active case of TB was classified as a "disease expressor."

The study found that nearly 5% (313 of 6,732) of Class B persons were reported to the state TB Program for suspected tuberculosis, and 136 of these 313 persons (44%) were confirmed as new, active cases of TB, which is 2% of the total study population and an estimated 10% of the TB cases among foreign-born persons from 1986 to 1996. Most new cases (76%) were classified as active TB within six months of arrival. Median length of time between arrival and

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## Prompt Case Reporting Needed to Control *Vibrio parahaemolyticus*

Last summer's major outbreak of *Vibrio parahaemolyticus* in Washington and parts of the western United States and Canada revealed the need for prompt case reporting that might have led to earlier closure of shellfish beds and curbing of the outbreak. *V. parahaemolyticus* is a major cause of seafood-related illness, typically during the summer. The organism commonly occurs at low levels in marine environments and for unknown reasons may "bloom" to levels sufficient to contaminate shellfish such as oysters, clams, crab, and shrimp.

Prominent symptoms are watery diarrhea and abdominal cramps that may be accompanied by nausea, low-grade fever, and headache. Onset ranges from four to 96 hours (median 23) after consumption of contaminated food. Illness usually persists three to seven days. Isolation of gram-negative bacterium from stool confirms the diagnosis. Washington has had three to 35

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## Tuberculosis *(from page 1)*

disease expression was 3.4 months. This large reservoir of infected persons presents the greatest risk for disease transmission.

Seventy percent of all disease expressors (97/136) were from the Philippines and Vietnam (Table 1). More than 90% had received a clinical evaluation by local health care providers after arriving in Washington. However, the study revealed that only 6% were placed on curative therapy, while 69% had preventive therapy. Surprisingly, 23% of disease expressors did not receive any drug treatment regimen. Prescription regimens did not vary by age or gender.

### Recommendations

These findings led to several recommendations. First, health care professionals who provide TB services or whose clinical practice includes immigrants and refugees need to be aware that Class B persons are at highest risk of developing active disease and that modification of clinical triaging protocols may be advisable to rule out active disease at initial evaluation. Second, TB control officials need to educate provider communities about the criteria for chemoprophylaxis of infected persons. Foreign-born persons with latent TB infec-

tion should be considered candidates for preventive isoniazid therapy, regardless of age. Additionally, since most disease expressors were newly arrived from either the Philippines or Vietnam, these two communities may benefit from local health department and health care practitioner outreach for screening and preventive therapy.

The reasons for rapid development of active disease in only some infected immigrants requires further epidemiologic study. Contributing factors may include immigration-associated stressors, high prevalence of subclinical infection, pre-emigration suppressive therapy, inadequate screening at emigration or immigration, or lack of patient adherence to chemoprophylaxis after immigration. More diligent administration of appropriate TB prophylaxis in an already infected population will reduce the pool of infected persons and may also reduce the reoccurrence rate of active disease. ♦

## Update: Rabies Prevention

Human rabies remains extremely rare in the United States but the number of cases has increased significantly. Twenty-six cases have been reported since 1990, including two in Washington State, compared to 10 cases reported nationwide during the 1980s.

Nineteen of the 26 persons infected during the 1990s contracted rabies viruses associated with bats. Five cases resulted from exposure to dogs outside of the United States (Mexico, Haiti, India, Nepal), and two were due to exposure to rabid dogs in Texas where coyote rabies occurs.

Bats are the only known rabies reservoir in Washington. Rabies may be transmitted to humans following seemingly insignificant exposures such as inapparent bites or scratches. Only one of the 19 bat-related human rabies cases since 1990 was associated with a reported bat bite. For some cases, including the two in Washington, no direct bat contact was reported or detected. In other cases contact included picking up a bat (dead or alive), a bat landing on the person, or the report of a bat in the home.

The Centers for Disease Control and Prevention has issued recommendations for managing potential exposures to bats:

1. The bat should be safely collected and submitted to the local health department for rabies testing. Wear heavy leather gloves,

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### For More Information

Contact Scott LaMontagne at the DOH Infectious Disease Assessment Unit in Olympia, 360-236-3459.

**TABLE 1: Demographic and clinical characteristics of Class B arrivals who developed active TB (expressors) in Washington State, 1986–1996 (N = 136)**

Demographic Characteristics			Clinical Characteristics		
	n	(%)		n	(%)
Sex			Site of Disease		
Male	83	(61)	Pulmonary	127	(93.4)
Female	53	(39)	Nonpulmonary	9	(6.6)
Age at Disease (years)			Drug Resistance		
<5	1	(<1)	None	105	(77.2)
5–19	2	(1.5)	Isoniazid (INH) only	5	(3.7)
20–34	30	(22.1)	Other single drug		
35–49	42	(30.9)	resistance	12	(8.8)
50–64	41	(30.1)	INH + one other drug	9	(6.6)
65 +	20	(14.7)	MDR-TB (at least INH and Rifampin)	5	(3.7)
Region of Origin					
Southeast Asia	106	(77.9)			
Vietnam	62	(59)			
Philippines	35	(33)			
Asia	12	(8.8)			
Near East	5	(3.7)			
Africa	2	(1.5)			
Eastern Europe	10	(7.4)			
Latin America	1	(<1)			

# Monthly Surveillance Data by County

May 1998\* – Washington State Department of Health

County	E. coli O157:H7	Salmonella	Shigella	Hepatitis A	Hepatitis B	Non-A, Non-B Hepatitis	Meningococcal Disease	Pertussis	Tuberculosis	Chlamydia	Gonorrhea	AIDS	Pesticides†	Lead\$#
Adams	1	0	1	0	0	0	0	0	0	0	0	0	0	0/#
Asotin	0	0	0	0	0	0	0	0	0	4	0	0	0	0/#
Benton	0	0	0	0	0	0	0	0	0	11	0	0	4	0/28
Chelan	0	0	0	0	0	0	0	0	0	8	0	0	2	1/19
Clallam	0	0	0	1	0	0	0	0	0	10	0	0	0	0/#
Clark	0	3	4	6	1	1	2	0	1	52	3	3	2	0/0
Columbia	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Cowlitz	0	0	0	0	0	0	0	0	0	4	0	0	0	4/34
Douglas	0	0	0	0	0	0	0	0	0	6	0	0	1	0/0
Ferry	0	0	0	0	0	0	0	0	0	1	0	0	0	0/0
Franklin	0	0	0	0	0	0	0	0	0	7	0	0	2	0/#
Garfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Grant	0	0	0	0	0	0	1	0	0	18	0	0	2	0/#
Grays Harbor	0	1	0	0	0	0	0	0	1	9	0	0	0	0/0
Island	0	0	0	0	0	0	1	1	0	8	3	0	0	0/7
Jefferson	0	0	0	1	0	0	0	0	0	0	0	0	0	0/0
King	1	3	3	12	0	0	0	2	19	280	77	14	4	3/30
Kitsap	0	4	0	2	0	0	0	0	0	50	12	0	1	0/19
Kittitas	0	0	0	0	0	0	1	0	0	14	0	0	1	0/#
Klickitat	0	0	0	0	0	0	0	0	0	3	0	0	0	0/0
Lewis	0	0	0	0	0	0	0	0	0	5	1	0	0	0/0
Lincoln	0	0	0	0	0	0	0	0	0	0	0	0	1	0/0
Mason	0	1	0	0	0	0	0	1	1	7	0	0	0	0/#
Okanogan	0	0	0	0	0	0	0	1	0	8	0	0	3	0/#
Pacific	0	1	0	0	0	0	0	0	0	3	0	0	0	0/0
Pend Oreille	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Pierce	2	5	1	3	2	0	0	12	3	152	21	3	1	2/121
San Juan	1	0	0	1	0	0	0	0	0	0	0	0	0	0/0
Skagit	0	0	0	0	2	0	0	0	1	6	0	0	0	0/#
Skamania	0	0	0	0	0	1	0	0	0	0	0	0	0	0/0
Snohomish	0	5	0	2	2	0	0	9	1	69	14	1	1	0/6
Spokane	0	1	0	18	0	0	0	0	3	56	5	0	2	2/17
Stevens	0	0	0	0	0	0	0	0	0	1	0	0	1	0/#
Thurston	1	4	0	3	0	0	0	1	1	23	3	0	0	0/#
Wahkiakum	0	0	0	0	0	0	0	0	0	1	0	0	0	0/0
Walla Walla	0	0	0	0	0	0	0	0	0	7	1	1	3	1/12
Whatcom	0	0	0	0	0	0	0	0	1	21	1	0	1	0/#
Whitman	0	0	0	2	0	0	0	0	0	3	1	0	0	0/#
Yakima	0	2	1	1	0	0	0	10	1	36	0	0	9	1/16
Unknown														0/1

Current Month	6	30	10	52	7	2	5	37	33	883	142	22	41	14/338
May 1997	8	95	45	25	11	2	6	30	99	649	106	33	37	11/300
1998 to date	20	127	47	387	38	10	31	123	18	4510	755	184	112	59/1581
1997 to date	17	235	88	220	30	11	49	159	121	3814	810	291	94	56/1742

\* Data are provisional based on reports received as of May 31, unless otherwise noted.

† Unconfirmed reports of illness associated with pesticide exposure.

\$# Number of elevated tests (data include unconfirmed reports) / total tests performed (not number of children tested); number of tests per county indicates county of health care provider, not county of residence for children tested; # means fewer than 5 tests performed, number omitted for confidentiality reasons.



## WWW Access Tips

The DOH web site includes a rabies fact sheet and guidelines for action and testing after an exposure: <http://www.doh.wa.gov/topics/topics.htm#Disease>

### Questions? Comments?

If you have a question about epidemiologic or public health issues, contact the editors at the address on the mailing panel or by email at [function@u.washington.edu](mailto:function@u.washington.edu)

### Correction to May Issue (page 4).

To receive copies of the 1995 State Cancer Registry Report, call Carolyn Comeau at 360-236-3676.

## Vibriosis (from page 1)

confirmed cases annually since *V. parahaemolyticus* became reportable in 1987.

From late July through August 1997, Washington had a large outbreak in which 57 confirmed and 19 suspected cases met the clinical case definition. Ninety percent consumed raw or incompletely cooked molluscan shellfish prior to becoming ill; 80% ate oysters. The remainder reported eating clams, prawns, crab, mussels, and fish. Seventy-one percent became ill after eating commercially harvested shellfish. For 59 cases with product traceback, 68% were associated with Washington seafood.

This outbreak highlighted problems with case reporting. Some case reports were received by the Department of Health one month or later after onset of illness. Timely reporting would have allowed for earlier closure of affected growing areas, which might have prevented subsequent cases.

Health care providers and laboratories should report confirmed or suspected cases to the local health jurisdiction within seven working days. LHJs should then contact the DOH Communicable Disease Epidemiology section (206-361-2914; fax: 206-361-2930). CDE staff will notify the DOH Office of Shellfish Programs, which will coordinate product traceback when appropriate.

## Rabies (from page 2)

trap the bat under a box or container, slide cardboard underneath, turn rightside up, and tape the cardboard securely so the bat can't escape. Do not damage the head because the brain is needed for testing.

2. Postexposure rabies prophylaxis (PEP) is recommended for all persons who have sustained bite, scratch, or mucous membrane exposures unless the bat is available for testing and is negative for rabies.

3. PEP is appropriate even in the absence of a demonstrable bite or other exposure when the disease status of the bat cannot be determined and when there is reasonable probability that contact occurred (e.g., a sleeping person awakens to find a bat in the room or an adult sees a bat in the room with a previously unattended child or mentally disabled or intoxicated person).

Health care providers should contact their local health department to report potential rabies exposures and to request assistance in evaluating the exposures, the need for PEP, and the need for testing the biting animal. Vaccination against rabies is the best way to protect pets and to lower the chances of exposure for pet owners.

Weekend and emergency assistance is available from Communicable Disease Epidemiology at 206-361-2914.

## Salmonella Cases Are Traced to Cereal

A national outbreak of *Salmonella Agona* is associated with Malt-o-Meals cereals. Twelve cases had been reported in Washington as of June 15. Suspected cases should be cultured and positives reported to local health jurisdictions. Further information is available from the company at 1-800-590-1810 or its web page: [www.malt-o-meal.com/press.html](http://www.malt-o-meal.com/press.html).

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